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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/705,932
Filing Date: November 13, 2003
Appellant(s): TANG ET AL.

Jung H. Kim
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 12/03/2008 appealing from the Office action mailed 09/03/2008.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

7039634	Xu et al.	5-2006

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-4, 6-22 and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Xu et al. (US 7,039,634 B2). The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of

this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

As per claims 1, 14 and 18 Xu at al. is directed to executing a search in a peer-to-peer system, the method comprising: receiving a query at a destination node (column 4, lines 31-37); receiving samples from a first set of nodes proximally located to the destination node in an overlay network for the peer-to-peer system, the samples associated with information stored at the proximally located nodes (column 3, lines 16-31 ; column 4, lines 36-42, wherein "samples" could be any object or information in the system); and identifying and selecting, based on the samples received from the first set of nodes, a first node of the first set of nodes likely storing information associated with objects stored in the peer-to-peer system that are relevant to the query (column 4, lines 39-42). forwarding the query to the identified first node (column 4, lines 31-42); generating semantic vectors for the objects stored in peer-to-peer system (column 3, line 51); hashing each of the semantic vectors to generate keys identifying locations in the overlay network to store key-value pairs for the objects, wherein the keys are semantic vectors for objects and the values include at least one of the objects and addresses for the objects (column 3, lines 18-20; column 4, lines 11-16); and storing the key-value pairs at the nodes associated with the identified locations in the overlay network wherein the stored key-value pairs associated with similar vectors are proximally located in the overlay network (column 4, lines 16-23).

As per claims 2, 15 and 19 Xu et al is directed further comprising: comparing the query to information stored in the first node; wherein the information stored in the first node is associated with objects stored in the peer-to-peer network (column 4, lines 39-42); and generating search results including information stored in the first node associated with objects relevant to the query based on the comparison of the query to the information stored in the first node (column 9, lines 50-57).

As per claims 3, 16 and 20 Xu et al is directed to further comprising: determining whether a quit threshold has been reached (column 9, lines 66-67); transmitting the search results to an initiator of the query in response to the quit threshold being reached (column 9, lines 64-65); and performing the following steps in response to the quit threshold not being reached: identifying a second node likely storing information associated with objects stored in the peer-to-peer network that are relevant to the query based on samples received from a second set of nodes including the second node, wherein the second set of nodes are nodes proximally located to the first node in the overlay network (column 9, lines 59-64); and adding information stored in the second node to the search results; the added information being associated with objects that are relevant to the query (column 9, lines 59-64).

As per claims 4, 17 and 21 Xu et al is directed to wherein the quit threshold is associated with at least one of hops in the overlay network and whether the search

results can be improved by adding information to the search results from the second node (column 4, lines 23-26).

As per claim 6 Xu et al. is directed to generating the samples for the first set of the nodes as a function of at least one of key-value pair stored at each of the first set of nodes (column 4, lines 1-4).

As per claim 7 Xu et al. is directed to wherein generating the samples comprises: generating a destination node semantic vector representative of objects associated with at least one of key-value pairs stored at the destination node and recent queries executed by the destination node (column 3, lines 16-23).

As per claim 8 Xu et al. is directed to wherein identifying, based on the samples received from the first set of nodes, a first node of the first set of nodes likely storing information associated with objects stored in the peer-to-peer network that are relevant to the query comprises: generating a semantic vector for each of the samples for the first set of nodes (column 5, lines 18-23); comparing the destination node semantic vector to each of the semantic vectors for the first set of nodes (column 5, lines 45-54); and identifying one of the semantic vectors for the first set of nodes closest to the destination node semantic vector (column 5, lines 45-54).

As per claim 9 Xu et al. is directed to further comprising: identifying lower elements for the semantic vectors (column 5, lines 11-14) generating planes in the overlay network associated with the lower elements (column 5, lines 11-14); performing the steps of claim 1 for each of the plains (see citations above).

As per claim 10 Xu et al. is directed to further comprising: storing indices of key-value pairs at the nodes (column 4, lines 20-23), replicating an index for a second node in the first node, wherein the second node is proximally located to the first node in the overlay network (column 4, lines 20-23); and identifying key-value pairs from the replicated index that are relevant to the query (column 4, lines 21-22).

As per claim 11 Xu et al. is directed to further compromising: storing indices of key-value pairs at the nodes (column 4, lines 20-23), in the first node, replicating indices for a plurality of nodes in a region in the overlay network including the first node (column 4, lines 20-23); and identifying key-value pairs from the replicated indices that are relevant to the query (column 4, lines 21-22).

As per claim 12 Xu et al is directed to wherein the first set of nodes are neighbor nodes to the destination node in the overlay network (column 4, lines 23-25).

As per claim 13 Xu et al is directed to wherein the second set of nodes are neighbor nodes to the first node in the overlay network (column 4, lines 23-25).

As per claim 22 Xu et al is directed to a peer-to-peer system comprising: a plurality of nodes in the system operating as a search engine operable to execute a query received by the search engine, each of the plurality of nodes comprising a storage device to store information (column 4, lines 32-36); an overlay network implemented by the plurality of nodes (column 6, lines 47-48); a plurality of indices stored at the plurality of nodes, each index including at least one semantic vector for an object (column 4, lines 20-23); and the semantic vectors is being hashed to generate keys identifying location in the overlay network to store key-value pairs for objects (column 3, lines 18-20; column 4, lines 11-16), wherein the keys are the semantic vectors for the objects and the values include at least one of the objects and addresses for the object (column 3, lines 18-20), wherein the key-value pairs are stored at the nodes associated with the identified locations in the overlay network, and the stored key-value pairs are associated with similar semantic vectors are proximally located in the overlay network (column 4, lines 16-23); wherein a first node in the search engine is configured to receive samples from the nodes proximally located to the first node in the overlay network, the first node utilizing the samples to identify and select an index of one of the other nodes to search in response to receiving the query (column 4, lines 39-42).

As per claim 24 Xu et al is directed to wherein the first node is located in a region in the overlay network and the first node is configured to store indices from nodes in the region, such that the first node is operable to search a plurality of indices likely to

include information relevant to the query without forwarding the query to other nodes in the region (column 4, lines 14-23; the word "operable to" should be changed to "configured to").

(10) Response to Argument

After careful review and consideration of Appellants arguments, Examiner respectfully asserts that Appellants arguments directed towards Independent Claims 1-4, 6-22, and 24 are not persuasive.

As per Appellants arguments asserting that Xu fails to disclose the limitation of “identifying and selecting, based on the samples received from the first set of nodes, a first node of the first set of nodes likely storing information associated with objects stored in the peer-to-peer system that are relevant to the query”, Examiner respectfully disagrees. Examiner notes that the Xu, Column 3, Lines 16-31 clearly discloses that semantic vectors (e.g. samples) are generated for documents in the network and Column 4, Lines 11-30 further disclose that the semantic vectors also indicate the locations in the network in which the documents represented by the semantic vectors are stored. Column 4, Lines 11-30 goes on to expressly disclose that *“By using a semantic vector to derive a location in the peer search network for storing a key pair, key pairs having similar information are stored in close proximity (e.g., within a limited number of routing hops). Therefore, instead of flooding a query to an entire peer-to-peer network, a limited number of nodes in close proximity in the peer search network may be searched to determine the results of a query.”*, which Examiner strongly asserts discloses that the samples from the first set of node (e.g. the set of nodes within a proximity to the destination node) are used to determine relevance with

the query in that the first set of nodes is placed in close proximity to the destination node due to relevance with the destination node. In other words, at the time of the query, it has already been determined, via the semantic vectors (e.g. samples), that the nodes in close proximity to the destination node have subject matter related to that of the destination node, and therefore the query. Examiner also notes, as noted in the Final Office Action dated 7/10/2008, that indicating that a first node is selected in this manner does not preclude additional nodes being selected, and therefor does not disqualify the use of a radius based on a semantic vector similarity threshold as disclosing the limitation of selecting a first node (e.g. in the radius based query flooding model of Xu, a first node, as well as several other additional nodes within the radius are selected). As per the above arguments, Examiner asserts that Xu discloses the limitation of “identifying and selecting, based on the samples received from the first set of nodes, a first node of the first set of nodes likely storing information associated with objects stored in the peer-to-peer system that are relevant to the query.”

As per Appellants arguments asserting Xu fails to disclose that "key pairs including semantic vectors and address indexes are received from a first set of nodes", Examiner respectfully disagrees. Examiner again notes Column 3, Lines 16-31, which expressly states *“For example, a document or information regarding the document is to be stored in the peer-to-peer network. A semantic vector is generated for the document. Each element of the semantic vector corresponds to the importance of an abstract concept in the document or query instead of a term in the document...”*, which indicates that the semantic vectors (e.g. samples) are generated and stored in the nodes which the documents reside (e.g. the nodes of the

first set of nodes) and Column 4, Lines 11-30 further disclose *"The semantic vector also indicates a location in the peer search network. As described above, information in the peer search network may be represented by a key pair comprising a semantic vector and an address index. The semantic vector is hashed to identify a point (or node) in the overlay network for storing the key pair. The key pair is then routed to a node owner of a zone of where the semantic vector falls in the peer search network. That is the key pair is routed to the node owner of the zone of where the identified point falls in the overlay network. Indices including key pairs may then be formed at a node or around nearby neighboring nodes. These indices may be searched in response to a query..."*, which indicates the semantic vectors may be stored as key pairs including the semantic vectors and an address index and are routed to the node owner of the zone (e.g. the destination node). As per the above arguments, Examiner asserts that Xu discloses that "key pairs including semantic vectors and address indexes are received from a first set of nodes."

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Michael J Hicks/

Examiner, Art Unit 2165

Conferees:

/Christian P. Chace/

Supervisory Patent Examiner, Art Unit 2165

/John R. Cottingham/

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